National Analytical Management Program (NAMP)
U.S. Department of Energy Carlsbad Field Office

TRAINING AND EDUCATION SUBCOMMITTEE

Radiochemistry Webinars

Environmental Radiochemistry & Bioassay Series

The NAMP cordially invites you to attend web-based lectures on specific topics developed in cooperation with the EPA and other Federal agencies, and our university partners. The selected topics are designed to strengthen the participant in areas of professional engineering practice identified by the nuclear industry or national laboratories, including but not limited to actinide chemistry in the environment and in the nuclear fuel cycle. Short (1 ½- to 2-hour) webinars on specific radiochemistry topics are presented by renowned university professors and leading scientists in radiochemistry.

Please plan to join us for Detection Decisions and Detection Limits

Who Should Attend: Project planners (who should understand the proper role of the MDA/MDC in planning), data users (who need to understand the purpose of the critical value in decision-making), and data producers (e.g., chemists and count room personnel, who should understand the significance of their measurement results)

Lecture Overview: This webinar presents the fundamental concepts of detection decisions and detection limits, including the *minimum detectable value*, possibly one of the most overused, misused, and abused concepts in radiochemistry. Because analyte detection in radiochemistry is based on statistical hypothesis testing, the webinar begins with an overview of the theory of hypothesis testing and shows how that theory has been adapted for analyte detection decisions. The *critical value* and *minimum detectable value* are explained in this context, with emphasis on correct understanding and prevention of common mistakes. Examples of a few of the many possible implementations are provided.

Free Webcast : Thursday, December 12, 2013, at 1:00 pm Eastern Time, 12:00 pm Central Time

Register NOW to attend at: https://foodshield.connectsolutions.com/limits/event/registration.html

For more information, please contact: Berta Oates at boates@portageinc.com or visit the NAMP website at www.wipp.energy.gov/namp

Meet the Presenter…

Keith McCroan

Keith McCroan is a mathematician and computer scientist at the EPA's National Analytical Radiation Environmental Laboratory (NAREL) in Montgomery, Alabama. He graduated summa cum laude from Auburn University at Montgomery with a BS in mathematics, and earned an MS in mathematics and a PhD in computer science from Florida State University. In 1991 Dr. McCroan was selected as the NAREL Technical Support Branch software development coordinator. In 1994 he moved to the Monitoring and Analytical Services Branch, now called the Center for Environmental Radioanalytical Laboratory Science, to become the quality assurance officer. From 1995 through 2004 he served on the Multi-Agency Radiological Laboratory Analytical Protocols (MARLAP) manual workgroup and was the primary author of two chapters ("Measurement Uncertainty" and "Detection and Quantification Capabilities") and three appendices. Dr. McCroan is a member of the ASTM Committee D19 (Water) and Subcommittee D19.04 (Methods of Radiochemical Analysis), and the NELAC Institute Committee on Radiochemistry.

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Watch for these Future Webinars

- Guide to Uncertainty Measurement (GUM) – January 24, 2014
- Mass Spectrometry – February 27, 2014
- Alpha Spectrometry – March 27, 2014
- Applications of Liquid Scintillation Counting – April 24, 2014